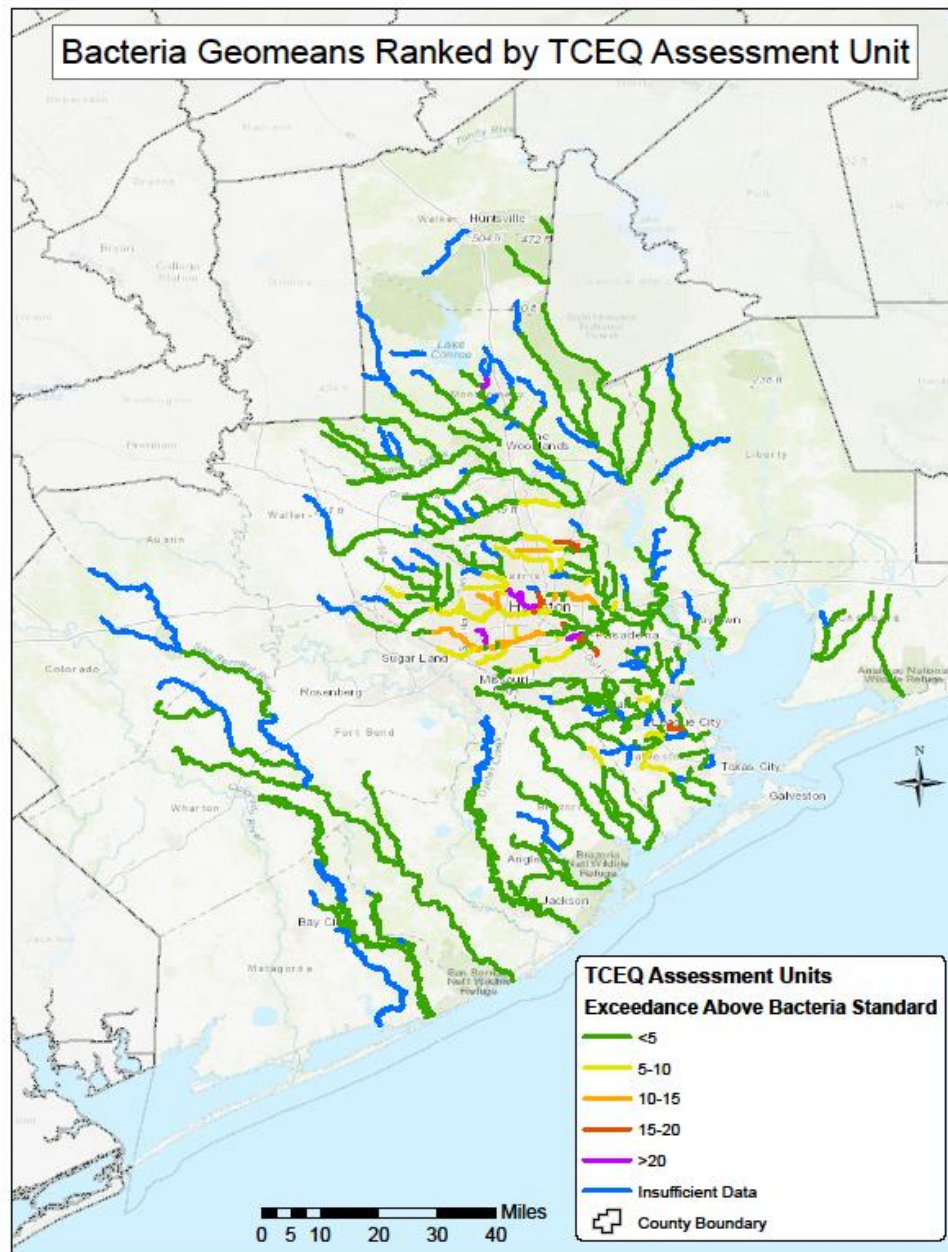
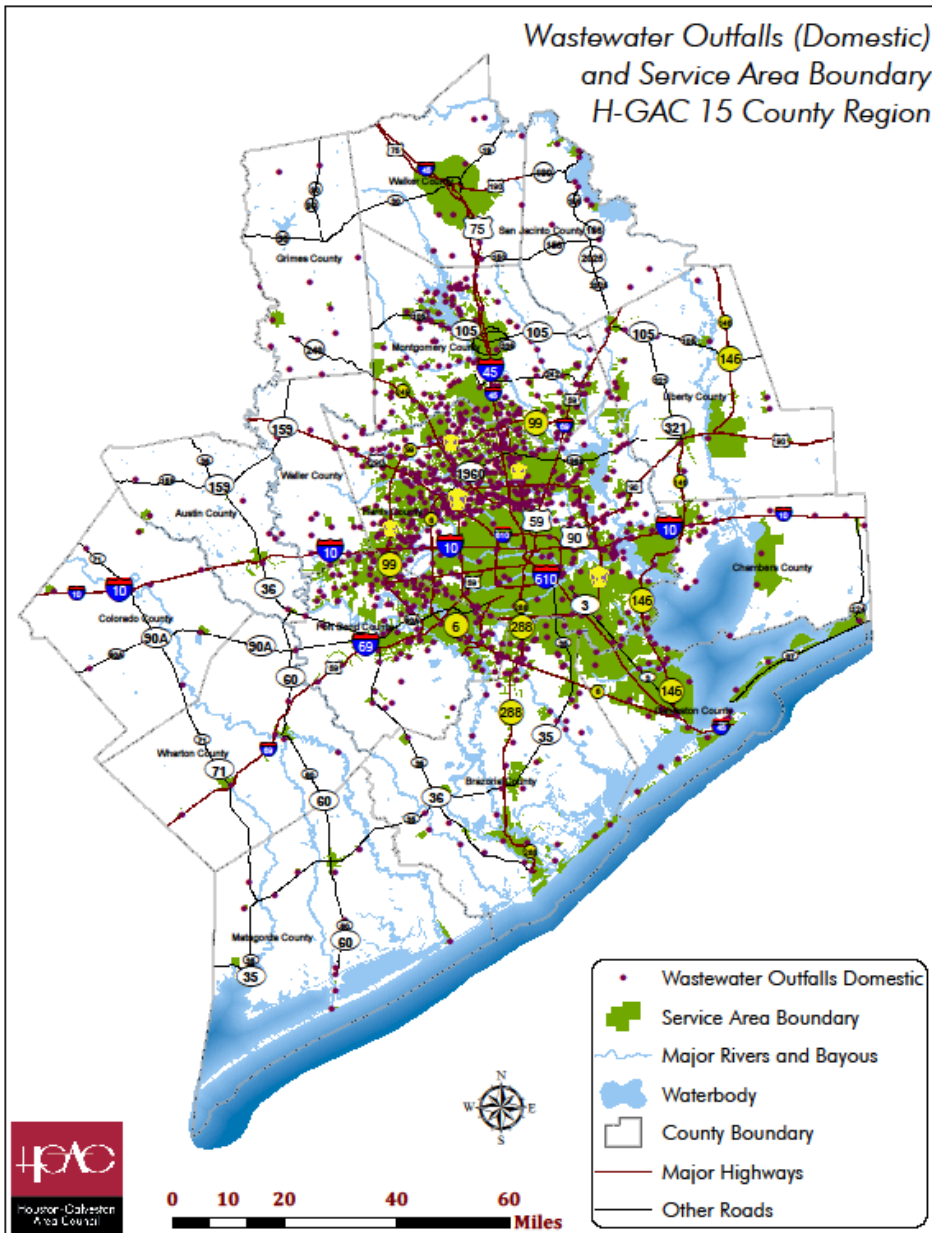


# Targeted Bacteria Monitoring Project

Houston-Galveston Area Council  
&  
Bayou Preservation Association

# Bacteria Geomeans Ranked by TCEQ Assessment Unit





# Domestic Wastewater Treatment Facilities

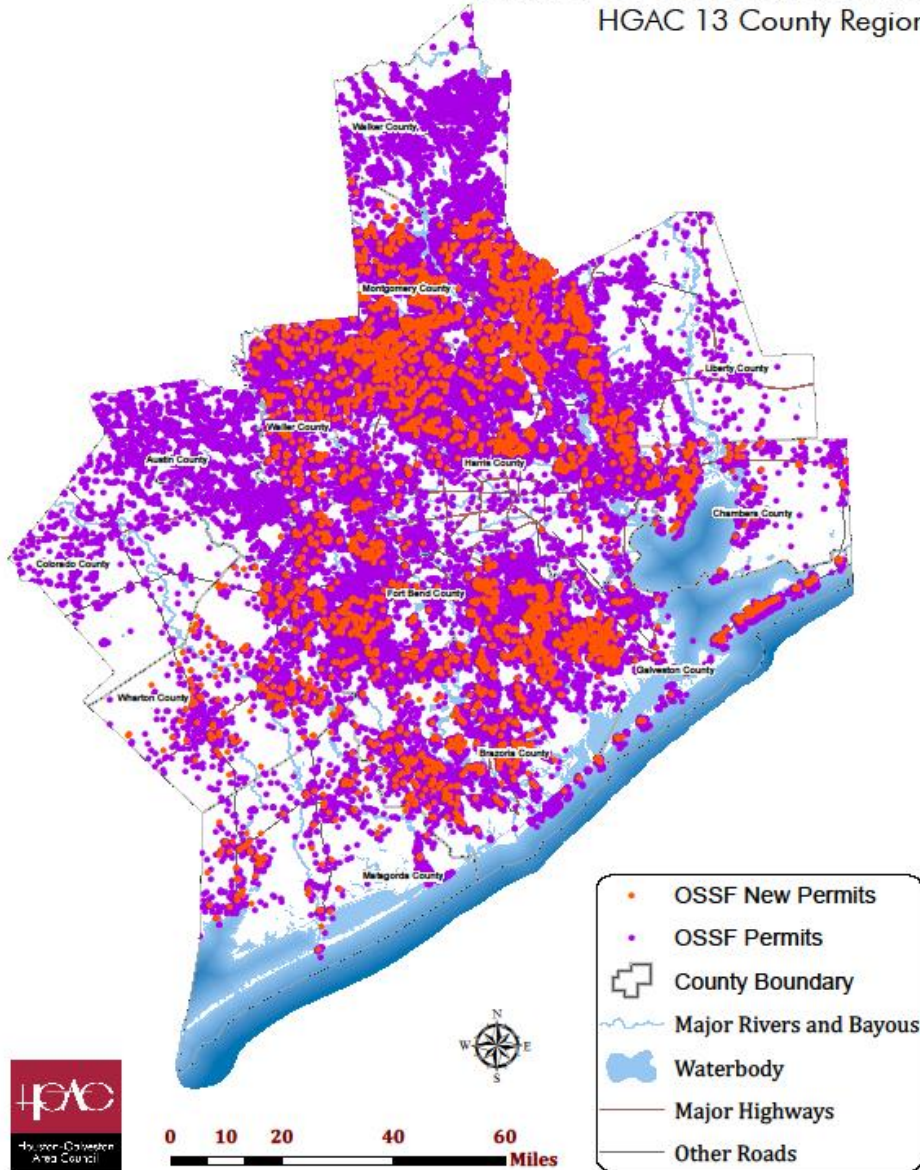
Over 900 Dischargers

- Varying sizes
- Varying ages
- Excellent job of treating waste
- Nearly 31% of discharges reported SSOs in 2020

## Stormwater Permits

- Over 130 permittees
- Number will go up

Permitted On-Site Sewage Facilities  
HGAC 13 County Region



**111,000 Permitted OSSFs in the H-GAC Region**

**Over 4,000 new systems in 2020**

**Estimated 200,000 unpermitted systems in the H-GAC Region**



# Targeted Bacteria Monitoring

- Contracting with Bayou Preservation Association
- 2, 8-week internships with Student Conservation Association interns
- Texas Stream Team protocols (Coliscan EasyGel)
- The BIG's Top10 Most Wanted List
- Targeted monitoring to track illicit discharges, broken infrastructure, etc.

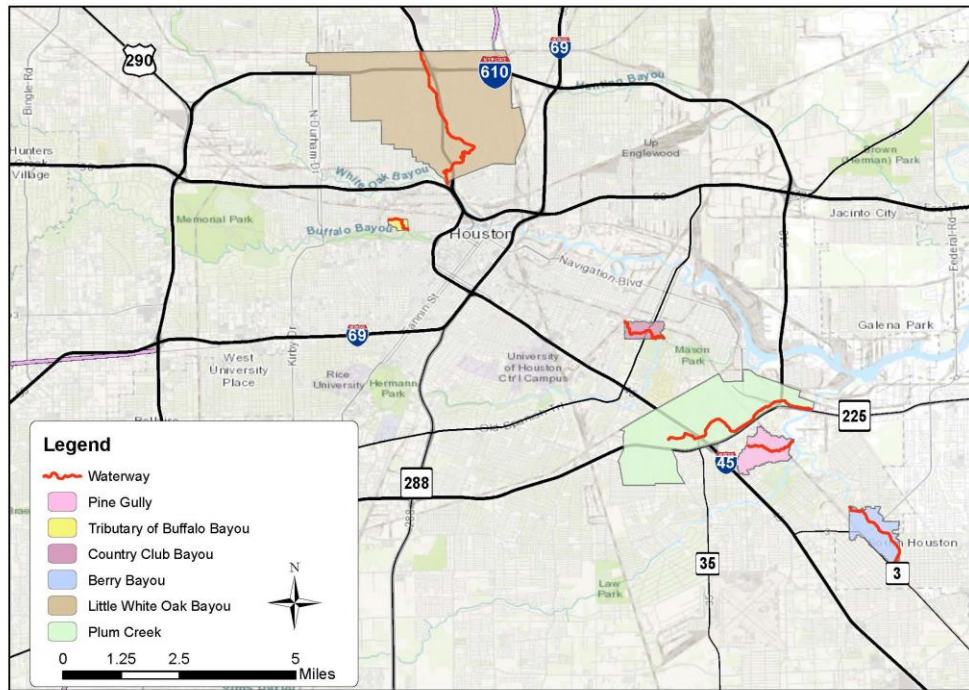


# Prioritized AUs

BIG Ranking	AU Name	AU ID	Relative Bacteria Geomean	AU Length (miles)
3	Plum Creek	1007I_01	28.63	3.55
6	Unnamed Non-tidal Tributary of Buffalo Bayou	1013C_01	19.53	0.56
7	Country Club Above Tidal	1007K_01	17.60	1.25
8	Pine Gully Above Tidal	1007H_01	17.47	1.06
9	Berry Bayou Above Tidal	1007F_01	17.02	1.89
12	Little White Oak Bayou	1013A_01	15.11	3.90

# Project Phases 1 and 2

H-GAC Targeted Monitoring Project Areas



- 4.5 AUs monitored
- 78 samples taken
- 58 samples > 399 CFU/100mL
  - 74% of total samples
- 13 samples > 20,000 CFU/100mL
  - 17% of total samples

Plum Creek	Trib. Of Buffalo Bayou	Country Club Bayou	Pine Gully	Berry Bayou	Little White Oak Bayou
completed	completed	completed	Not monitored	completed	Partially completed



# Plum Creek SSO



Reported to City of Houston  
Public Works Department



# Tributary of Buffalo Bayou



**Fat, Oils & Grease (FOG)  
residue reported to City of  
Houston Health Department**



# Damaged Infrastructure



Country Club Bayou



Berry Bayou



Plum Creek



# Litter and Illegal Dumping



Little White Oak

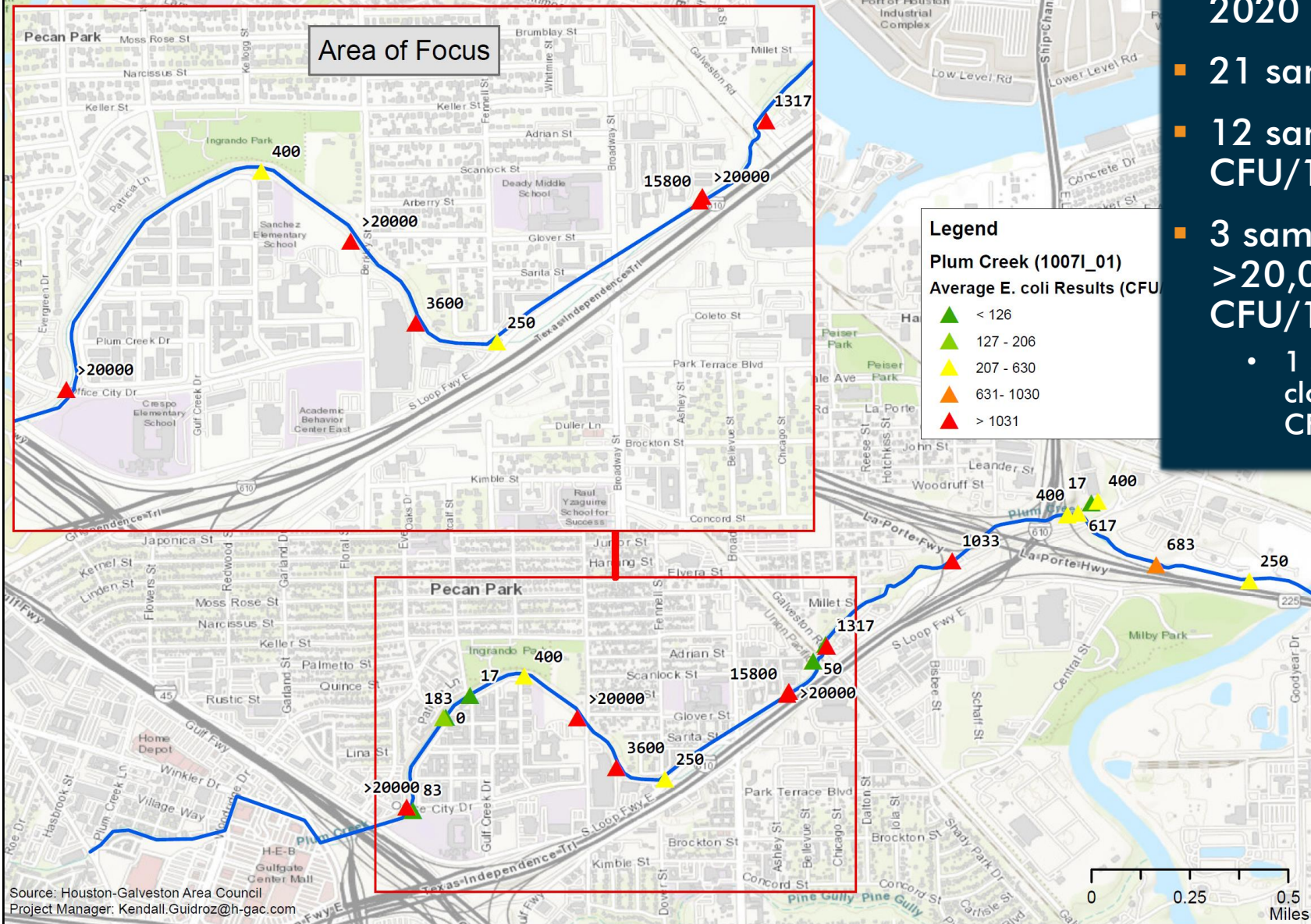


Pine Gully



## Plum Creek (1007I\_01) Field Investigation Results

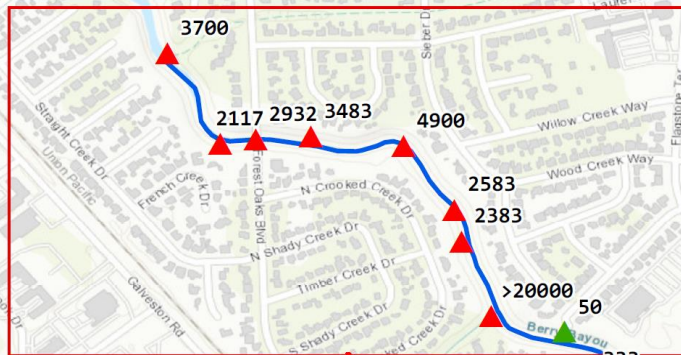
- Monitored December 9-16, 2020
- 21 samples taken
- 12 samples >390 CFU/100mL
- 3 samples >20,000 CFU/100mL
  - 1 sample very close at 15,800 CFU/100mL



Source: Houston-Galveston Area Council  
 Project Manager: Kendall.Guidroz@h-gac.com



# Berry Bayou (1007F\_01) Field Investigation Results



## Legend

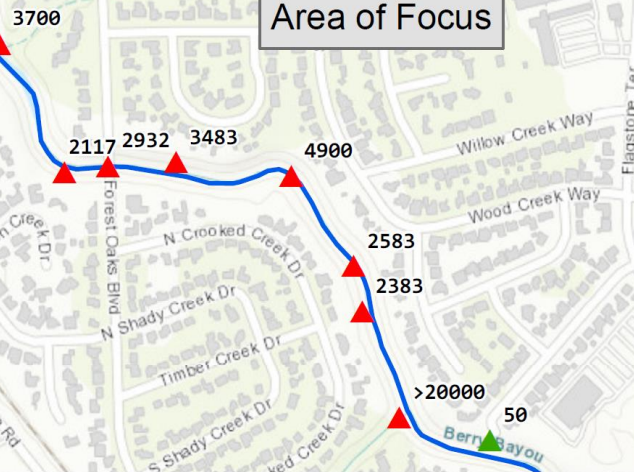
### Berry Bayou (1007F\_01)

Average E.coli Results (CFU/100mL)

- ▲ < 126
- ▲ 127 - 206
- ▲ 207 - 630
- ▲ 631 - 1030
- ▲ > 1031

- Monitored June 2-9, 2021
- 20 samples taken
- 15 samples > 399 CFU/100mL
- 1 sample > 20,000 CFU/100mL
  - A tributary that might need more investigation

## Area of Focus



Source: Houston-Galveston Area Council  
Project Manager: Kendall.Guidroz@h-gac.com

South Houston Intermediate School

0 0.15 0.3 Miles

# Unnamed Non-Tidal Tributary of Buffalo Bayou (1013C\_01) Field Investigation Results

- Monitored June 10, 2021
- 7 samples taken
- All samples >399 CFU/100mL
- 2 samples >20,000 CFU/100mL
  - From where AU returns above ground near an ornamental pond

## Legend

Unnamed Tributary of Buffalo Bayou (1013C\_01)

Average E.coli Results (CFU/100mL)

- ▲ < 126
- ▲ 127 - 206
- ▲ 207 - 630
- ▲ 631- 1030
- ▲ > 1031

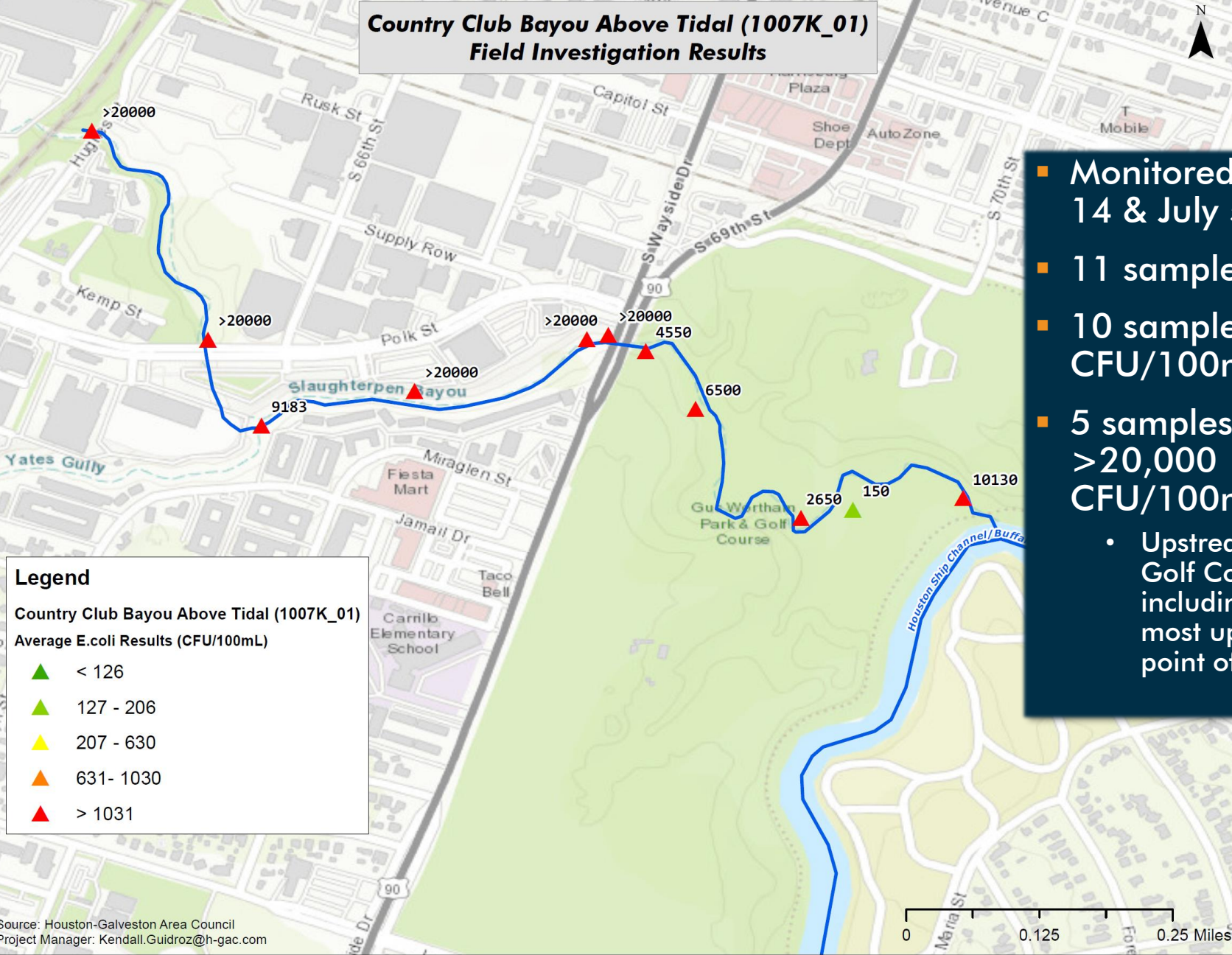
Stream Segment Underground

Source: Houston-Galveston Area Council  
Project Manager: Kendall.Guidroz@h-gac.com

0 0.05 0.1 Miles



# Country Club Bayou Above Tidal (1007K\_01) Field Investigation Results



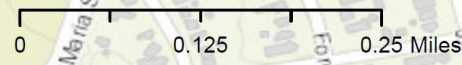
**Legend**

Country Club Bayou Above Tidal (1007K\_01)  
Average E.coli Results (CFU/100mL)

- ▲ < 126
- ▲ 127 - 206
- ▲ 207 - 630
- ▲ 631- 1030
- ▲ > 1031

- Monitored June 14 & July 5, 2021
- 11 samples taken
- 10 samples >399 CFU/100mL
- 5 samples >20,000 CFU/100mL
  - Upstream of the Golf Course, including the most upstream point of the AU.

Source: Houston-Galveston Area Council  
Project Manager: Kendall.Guidroz@h-gac.com





# **Little White Oak Bayou (1013A\_01)** **Field Investigation Results - Partial Completion**



**Remaining Segment to Complete = 1.15 Miles**

- Monitored June 15 & 21, & July 12, 2021
- 15 samples taken
- 13 samples >399 CFU/100mL
- No samples >20,000 CFU/100mL
- 1.15 miles upstream not sampled

## **Legend**

Average E.

- ▲ < 127
- ▲ 127 - 206
- ▲ 207 - 630
- ▲ 631- 1030
- ▲ > 1031

0 0.25 0.5 Miles

Source: Houston-Galveston Area Council  
 Project Manager: Kendall.Guidroz@h-gac.com

# Roadblocks & Lessons Learned

- Supply issues
- Unusually wet summer
- Continuous programs might choose different intern schedules
- SSOs that go unreported are suspected sources in many cases.



# Project Phase 3 (Proposed)

- QAPP Renewal
- Complete monitoring of the prioritized AUs
- Targeted Outreach to the residents in the AU watersheds
- “Eyes on the Bayou” trainings in collaboration with City of Houston Public Works

# Questions?